

What is claimed is:

1. A chemical mechanical polishing pad comprising:
a polishing pad having a window for end-point detection formed therein; and
wherein the window is formed from a reaction of an aliphatic polyisocyanate, a hydroxyl-containing material and a curing agent.
2. The polishing pad of claim 1 wherein the aliphatic diisocyanate is selected from the group comprising: methylene bis 4,4' cyclohexylisocyanate, cyclohexyl diisocyanate, isophorone diisocyanate, hexamethylene diisocyanate, propylene-1,2-diisocyanate, tetramethylene-1,4-diisocyanate, 1,6-hexamethylene-diisocyanate, dodecane-1,12-diisocyanate, cyclobutane-1,3-diisocyanate, cyclohexane-1,3-diisocyanate, cyclohexane-1,4-diisocyanate, 1-isocyanato-3,3,5-trimethyl-5-isocyanatomethylcyclohexane, methyl cyclohexylene diisocyanate, triisocyanate of hexamethylene diisocyanate, triisocyanate of 2,4,4-trimethyl-1,6-hexane diisocyanate, uretdione of hexamethylene diisocyanate, ethylene diisocyanate, 2,2,4-trimethylhexamethylene diisocyanate, 2,4,4-trimethylhexamethylene diisocyanate, dicyclohexylmethane diisocyanate, and mixtures thereof.
3. The polishing pad of claim 1 wherein the hydroxyl-containing group is selected from the group comprising: polyether polyols, hydroxy-terminated polybutadiene, polyester polyols, polycaprolactone polyols, polycarbonate polyols, and mixtures thereof.
4. The polishing pad of claim 1 wherein the curing agent is selected from the group comprising: polydiamine, diol, triol, tetraol, and mixtures thereof.
5. The polishing pad of claim 1 wherein the aliphatic polyisocyanate has less than 14% unreacted isocyanate groups.
6. The polishing pad of claim 1 wherein the window has an optical transmission of at least 21% over a wavelength range of 400-750 nm.

7. An apparatus for chemical mechanical polishing comprising:
a platen for supporting a polishing pad, the polishing pad having a window for end-point detection formed therein;
a wafer carrier for pressing a wafer against the polishing pad;
means for providing a polishing fluid between the wafer and the polishing pad; and
wherein the window is formed by reacting an aliphatic polyisocyanate, a hydroxyl-containing material and a curing agent.
8. A method of forming a chemical mechanical polishing pad, the method comprising:
providing a polishing pad having a window for end-point detection formed therein;
and
wherein the window is formed by reacting an aliphatic polyisocyanate, a hydroxyl-containing material and a curing agent.
9. The method of claim 8 wherein the aliphatic polyisocyanate is selected from the group comprising: methylene bis 4, 4 cyclohexylisocyanate, cyclohexyl diisocyanate, isophorone diisocyanate, hexamethylene diisocyanate, propylene-1,2-diisocyanate, tetramethylene-1,4-diisocyanate, 1,6-hexamethylene-diisocyanate, dodecane-1,12-diisocyanate, cyclobutane-1,3-diisocyanate, cyclohexane-1,3-diisocyanate, cyclohexane-1,4- diisocyanate, 1-isocyanato-3,3,5-trimethyl-5-isocyanatomethylcyclohexane, methyl cyclohexylene diisocyanate, triisocyanate of hexamethylene diisocyanate, triisocyanate of 2,4,4-trimethyl-1,6-hexane diisocyanate, uretdione of hexamethylene diisocyanate, ethylene diisocyanate, 2,2,4-trimethylhexamethylene diisocyanate, 2,4,4-trimethylhexamethylene diisocyanate, dicyclohexylmethane diisocyanate, and mixtures thereof.
10. The method of claim 8 wherein the window has an optical transmission of at least 21% over a wavelength range of 400-750 nm.